

Tel:(86) 755-26825180 Fax:(86) 755-86170310

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Test Report

Product Name: GPS PORTABLE NAVIGATION DEVICE

FCC ID: VUP-G58C001

Model No.: 58C-1, 58C-2, 58C-3, 58C

Applicant:

YF INTERNATIONAL LIMITED

7TH FL., CHINA ACADEMY OF SCIENCE&TECHNOLOGY DEV.,
HIGH TECH SOUTH STREET 1, CHINA

Date Received: 12/06/2008

Date Tested: 12/05-06/2008

APPLICANT: YF INTERNATIONAL LIMITED



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# TABLE OF CONTENTS

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# TEST REPORT CONTAINING:

PAGE 1TEST EQUIPMENT LIST
PAGE 2TEST PROCEDURE
PAGE 3-5POWER LINE CONDUCTED INTERFERENCE AND PLOTS
PAGE 5-7RADIATION INTERFERENCE TEST DATA
PAGE 8-11OCCUPIED BANDWIDTH AND PLOTS

# EXHIBIT INCLUDED:

PAGE 1BLOCK DIAGRAM
PAGE 2SCHEMATIC
PAGE 3USERS MANUAL
PAGE 4LABEL SAMPLE
PAGE 5LABEL LOCATION
PAGE 6EXTERNAL PHOTOGRAPHS
PAGE 7INTERNAL PHOTOGRAPHS
PAGE 8OPERATIONAL DESCRIPTION
PAGE 9TEST SET UP PHOTOGRAPHS

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# EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.
					Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Apr.05,2008	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Apr.05,2008	1Year
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101202	Apr.05,2008	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238316	Apr.05,2008	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr.05,2008	1 Year
Bilog Antenna	Sunol	JB3	A121206	Apr.05,2008	1 Year
Horn Antenna	EMCO	3115	640201028-0 6	Apr.05,2008	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr.05,2008	1 Year
Cable	Resenberger	N/A	NO.1	Apr.05,2008	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Apr.05,2008	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Apr.05,2008	1 Year
Single Phase Power	Kikusui	LIN40MA-PC	LM002352	Apr.05,2008	1Year
Line Filter		R-L			
AC Power Source	Kikusui	AC40MA	LM003232	Apr.05,2008	1Year
Test analyzer	Kikusui	KHA1000	LM003720	Apr.05,2008	1Year
ESD Tester	Kikusui	KES4021	LM003537	Apr.07,2008	1 Year
Signal Generator	IFR	2032	203002/100	Apr.07,2008	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
Dual Directional Coupler	A&R	DC6080	301508	Apr.05,2008	1 Year
Power Head	Power Head A&R		301193	Apr.05,2008	1 Year
Power Meter A&R		PM2002	302799	Apr.05,2008	1 Year
Field Monitor A&R		FM5004	300329	Apr.05,2008	1 Year
Field Probe A&R		FP5000	300221	Apr.05,2008	1 Year
EMCPRO System EM Test		UCS-500-M4	V064810202 6	Apr.05,2008	1 Year
EMCPRO System	EM Test	UCS-500-M4	V064810202 6	Apr.05,2008	1 Year

#### Remark:

Test Firm Name: Most Technology Service Co., Ltd.

Test Firm Address:

No. 5, 2nd Langshan Road, North District, Hi-tech Industrial

Park, Nanshan, Shenzhen, Guangdong, China

FCC Registered Test Site Number: 490827

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#### TEST PROCEDURE

**GENERAL:** This report shall NOT be reproduced except in full without the written approval of MOST TECHNOLOGY SERVICE CO., LTD. The EUT was transmitting a test signal during the testing.

**POWER LINE CONDUCTED INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a 50 U H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25 with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings were converted to average readings based on the duration of "ON" time.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard  $C63.4-2003\ 10.1.7$  with the EUT  $40\ cm$  from the vertical ground wall.

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FCC ID: VUP-G58C001

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.207

REQUIREMENTS:

Frequency of Emission (MHz)

Conducted Limit (dBuV)

Quasi-peak

Average

0.15-0.5 66 to 56 \* 56 to 46 \* 0.5-5 56 46 5-30 60 50

TEST PROCEDURE: ANSI STANDARD C63.4-2003

THE HIGHEST EMISSION READ FOR LINE 1 WAS 61.54dBUV @ 0.158MHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 60.56dBuv @ 0.155MHz.

THE PLOTS ON THE NEXT PAGE REPRESENT THE EMISSIONS READ FOR POWER LINE CONDUCTED FOR THIS DEVICE.

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<sup>\*</sup> Decreases with the logarithm of the frequency.

Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park

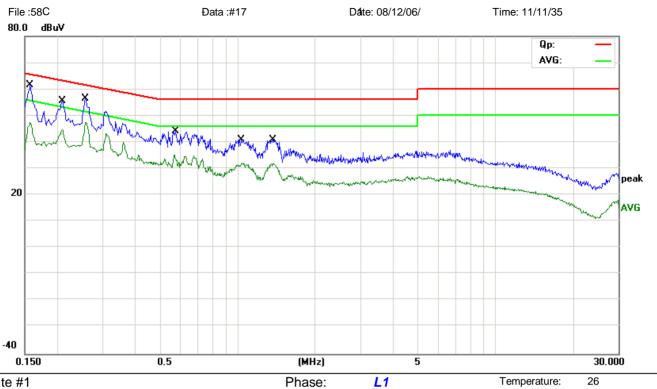
DC 5V Adaptor AC 120V/60Hz Humidity:

60 %

Guangdong, China

Tel: 0755-86170306 Fax: 0755-86170310

#### **Conducted Emission Measurement**



Site site #1

Limit: FCC Part 15C Conduction

EUT: GPS Portable Navigation Device

M/N: 58C-1

Mode: ON(FM Mode)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1580	52.06	9.48	61.54	65.57	-4.03	QP	
2		0.1580	37.64	9.48	47.12	55.57	-8.45	AVG	
3		0.2100	43.77	11.93	55.70	63.21	-7.51	QP	
4		0.2100	32.95	11.93	44.88	53.21	-8.33	AVG	
5		0.2580	44.90	11.61	56.51	61.50	-4.99	QP	
6	*	0.2580	35.89	11.61	47.50	51.50	-4.00	AVG	
7		0.5700	33.42	10.00	43.42	56.00	-12.58	QP	
8		0.5700	25.24	10.00	35.24	46.00	-10.76	AVG	
9		1.0380	30.68	9.96	40.64	56.00	-15.36	QP	
10		1.0380	21.80	9.96	31.76	46.00	-14.24	AVG	
11		1.3580	30.57	9.64	40.21	56.00	-15.79	QP	
12		1.3580	22.35	9.64	31.99	46.00	-14.01	AVG	

Power:

\*:Maximum data x:Over limit !:over margin

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Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park

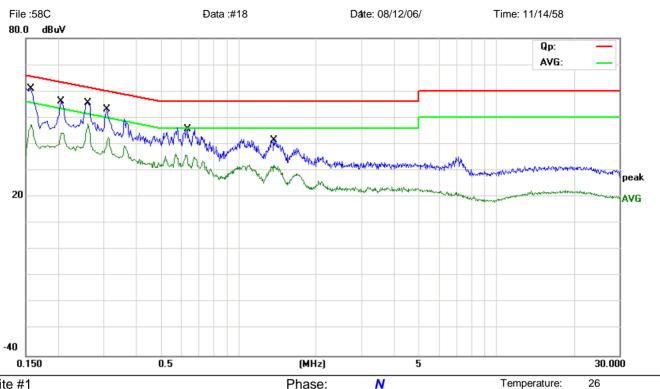
DC 5V Adaptor AC 120V/60Hz Humidity:

60 %

Guangdong, China

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#### **Conducted Emission Measurement**



Phase:

Power:

Site site #1

Limit: FCC Part 15C Conduction

EUT: GPS Portable Navigation Device

M/N: 58C-1

Mode: ON(FM Mode)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1556	51.22	9.34	60.56	65.70	-5.14	QP	
2		0.1556	36.76	9.34	46.10	55.70	-9.60	AVG	
3		0.2060	44.24	11.96	56.20	63.37	-7.17	QP	
4		0.2060	32.07	11.96	44.03	53.37	-9.34	AVG	
5		0.2620	43.98	11.59	55.57	61.37	-5.80	QP	
6	*	0.2620	36.03	11.59	47.62	51.37	-3.75	AVG	
7		0.3100	42.03	11.27	53.30	59.97	-6.67	QP	
8		0.3100	29.69	11.27	40.96	49.97	-9.01	AVG	
9		0.6300	34.50	10.00	44.50	56.00	-11.50	QP	
10		0.6300	25.86	10.00	35.86	46.00	-10.14	AVG	
11		1.3700	27.91	9.63	37.54	56.00	-18.46	QP	
12		1.3700	20.17	9.63	29.80	46.00	-16.20	AVG	

\*:Maximum data x:Over limit !:over margin

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NAME OF TEST: RADIATION INTERFERENCE

**RULES PART NUMBER:** 15.239, 15.209

**REQUIREMENTS:** 

FIELD STRENGTH of

S15.209

Fundamental:

88-108 MHZ 30 -88 MHz 40 dBuV/m @3M

88 - 216 MHz 43.5 216 - 960 MHz 46

47.96 dBuV/m @3m ABOVE 960 MHz 54dBuV/m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

# REMARK: Emissions attenuated more than 20 dB below the permissible value are not reported.

Fundamental Radiation Interference Data:

Frequency (MHz)	Antenna Polarization	Emission	Level (dBuV/r	FCC 15 Subpart C Limit (dBuV/m)				
	1 Glarization	Avg	QP	Peak	Elitilit (dbd v/iii)			
		00.414	<u> </u>					
		88.1M	IHZ					
88.100	Vertical		43.30	45.01	47.96			
88.100	Horizontal		39.13	40.98	47.96			
98.1MHz								
98.100	Vertical		42.05	44.34	47.96			
98.100	Horizontal		40.79	42.56	47.96			
107.9MHz								
107.900	Vertical		41.31	43.62	47.96			
107.900	Horizontal		39.32	40.33	47.96			

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**RULES PART NUMBER:** 15.239, 15.209

REQUIREMENTS:

FIELD STRENGTH of S15.209

Fundamental:

88-108 MHz 30 -88 MHz 40 dBuV/m @3M

88 - 216 MHz 43.5 216 - 960 MHz 46

47.96 dBuV/m @3m ABOVE 960 MHz 54 dBuV/m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

#### Continued:

General Radiation Interference Data:

Frequency (MHz)	Antenna	Emission Le	vel (dBuV/m)	FCC 15 Subpart C	
	Polarization	Avg	QP	Peak	Limit (dBuV/m)
165.80	Horizontal			30.03	43.5
192.96	Horizontal			31.08	43.5
348.16	Horizontal			30.47	46.0
546.03	Horizontal			29.86	46.0
41.64	Vertical			31.81	40.0
62.97	Vertical			30.09	40.0
90.14	Vertical		34.32	36.70	40.0
134.75	Vertical			30.43	43.5

TEST PROCEDURE: ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector and an appropriate antenna. The resolution bandwidth of spectrum analyzer was 100 kHz below 1 GHz and 1 MHz above 1 GHz. An appropriate sweep speed was used. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

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NAME OF TEST: Occupied Bandwidth and Band Edge Compliance

**RULES PART NUMBER:** 15.239, 15.209

**REQUIREMENTS:** Emissions from the intentional radiator shall be confined within

a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of

88-108 MHz.

Band edge emissions plots are included on the following pages

**METHOD OF MEASUREMENT:** A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to 10 dB per division.

TEST RESULTS: The unit DOES meet the FCC requirements.

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When the EUT transmits the real MP3 file max volume level.

# 88.1MHz



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# 98.1MHz



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#### 107.9MHz



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